Guidelines for the Control of Drugs and Alcohol in the Maritime Industry

(Third edition March 2024)

Issued by the

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The Oil Companies International Marine Forum (OCIMF)
Founded in 1970, the Oil Companies International Marine Forum (OCIMF) is a voluntary association of oil companies having an interest in the shipment and terminalling of crude oil, oil products, petrochemicals and gas, and includes companies engaged in offshore marine operations supporting oil and gas exploration, development and production.

Our vision is a global marine industry that causes no harm to people or the environment.

Our mission is to lead the global marine industry in the promotion of safe and environmentally responsible transportation of crude oil, oil products, petrochemicals and gas, and to drive the same values in the management of related offshore marine operations. We do this by developing best practices in the design, construction and safe operation of tankers, barges and offshore vessels and their interfaces with terminals and considering human factors in everything we do.

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Glossary

A and B samples When a sample is collected for drug testing and placed in two separate containers. The standard practice is for the Collecting Agent to divide the sample into two containers, which are then sealed, signed and sent for analysis. One sample (A) will be analysed immediately on receipt by the laboratory. The other (B) will be preserved for a specified period of time in case of any appeal or other requirement for further analysis.

Accidental exposure This occurs when an individual is unknowingly exposed to a substance and a relevant dose of the substance is taken up into the system.

Adulteration The action of tampering with a specimen to influence the result.

Alcohol A consumable liquid containing ethanol (e.g. beer, wine, spirits). This includes powdered alcohol that can be reconstituted into an alcoholic drink.

Chain of Custody (COC) Procedures to account for the integrity of each specimen or sample by tracking the handling and storage from point of specimen collection to final destination of the specimen or sample.

Cognition The mental action or process of acquiring knowledge and understanding through thought, experience and the senses.

Collection To undertake drug and alcohol specimen collection to transport to a secured storage for testing at a laboratory. Collection agencies are often contracted by either ship and terminal operators or Third-Party Administrators (TPAs) working on behalf of an operator.

Company An organisation that engages a marine or ship operator to provide services that require the use of these guidelines.

Concentration Mass of a substance in a defined volume.

Confirmation or confirmatory test (drug or alcohol)
Drug: a second analytical procedure performed on a different portion of the original drug specimen to identify and quantify the presence of a specific drug or drug metabolite.

Alcohol: a breath test using an Evidential Breath Testing (EBT) device, or a blood or urine sample analysed by an accredited laboratory.

Contractor A company or individual that undertakes a contract or agreement to provide a service, materials or labour, e.g. a pilot, a Person in Overall Advisory Control (POAC) or STS Superintendent, service engineers.

Cut-off The value used to establish and report a specimen as negative or positive for the presence of a drug or alcohol or as adulterated, substituted, or invalid. Often expressed as a concentration (mass of a substance in a defined volume).

Dependency Sometimes referred to as addiction. Within the remit of this document, a condition in which an individual is physically or psychologically dependent upon drugs and/or alcohol.

Designated Person Ashore (DPA) A person appointed to monitor the safe operation of a ship and to provide a link between the company and those on board the ship as detailed in the International Safety Management Code.

Donor The individual from whom a specimen is collected.

Drug A medicine or other chemical substance that has a physiological effect when ingested or otherwise introduced into the body.

Drugs and alcohol The term drugs and alcohol in this document includes all psychoactive substances (see definition below).

Drug testing Testing via validated methods for the presence of selected prohibited substances in the specimen equal to or above a designated cut-off.

Employee Assistance Programme A work-based programme designed to help employees with personal issues, for example through providing access to confidential counselling and support services.

Evidential Breath Testing (EBT) A test for the presence of alcohol, the results of which are accurate enough to be used as admissible evidence in a court of law. EBT devices are approved to high standards and are suitable for use by trained personnel in the workplace when carrying out pre-enrolment testing, random testing, post-incident testing and reasonable suspicion testing.

False-positive A result that indicates a given condition exists when it does not.

Holistic approach An approach striving for more than the absence of substance use and disease. It focuses on underlying causes and prevention, contributing factors, and the support of the emotional, physical and social wellbeing of individuals.

Illicit/illegal drug A substance that is illegal to import, stock, distribute, possess, or use under local or national law.

Immunoassay A biochemical test that uses the binding of antibodies to antigens to identify and measure certain substances.

Invalid result A result reported by a laboratory when a positive, negative, adulterated or substituted result cannot be established for a specific drug.

Laboratory A laboratory certified to the requirements of these guidelines or to the requirements of the relevant jurisdiction for performing legally compliant blood alcohol and drug testing.

Laboratory negative result A result reported by a laboratory when a valid specimen contains no drug or the level of the drug is less than the cut-off for the drug or drug class.

Laboratory positive result A result reported by a laboratory when a valid specimen contains a drug or drug metabolite equal to or greater than the cut-off. See also non-negative result.

Medical Review Officer (MRO) A licensed physician who has formal training/certification in the MRO role for receiving and reviewing all laboratory non-negative drug results to determine whether an employee has a verified negative or positive test result, and for reporting the test result to the operator.

Metabolite An intermediate or end product of metabolism. Used for detection and analysis for some substances.

Methodology A system of methods used in a particular area of study or activity.

Non-negative result A specimen that is reported by the laboratory as positive for drug(s)/drug metabolite(s), adulterated, substituted and/or invalid.

On-site screening A screening test using a single-use test device, sometimes called a field screen device, at a collection site, which is used to differentiate a negative specimen from one that requires further testing for alcohol, drugs or drug metabolites. Any non-negative drug screen result should be sent to a laboratory for a confirmatory test. Alcohol on-site screening tests may be confirmed at the collection site using an EBT, or a blood specimen can be sent to a laboratory for confirmation.

Post-incident test A drug and alcohol test conducted following a qualifying incident when any employee's actions contributed to the incident or cannot be completely dismissed as a contributing factor.

Pre-enrolment test A drug and alcohol test meeting these guidelines that is conducted before an employee is hired.

Prescription medication/drug A regulated pharmaceutical medicine that requires authorisation by a physician or other qualified healthcare professional before it can be legally obtained in the jurisdiction where personnel are working. The term is used to differentiate from over-the-counter medication, which can be obtained without authorisation.

Prohibited substance A substance covered by the organisation's drug and alcohol policy of which use is not permitted.

Psychological Relates to the mental and emotional state of a person.

Psychoactive substance Any substance that affects how the brain works and causes changes in mood, awareness, thoughts, feelings, or behaviour. This includes alcohol, prescription and over the counter medication as well as recreational drugs, which may be legal or illegal.

Qualifying incident An incident involving an employee or contractor on ship or terminal operator premises, which may include but is not limited to the following:

- A person sustains injuries requiring more than first aid.
- A person involved in a high consequence near miss.
- An environmental incident, process safety incident, community impact, or property damage incident, as determined by the ship or terminal site supervisor/manager.
- A driver is involved in a motor vehicle accident requiring significant repair and/or causing disabling damage to the vehicle.

Random test Unannounced testing of an employee using a random selection process to select one or more individuals or ships from all the operator employees/ships.

Reasonable suspicion test A drug and alcohol test conducted when any employee exhibits signs and behaviours of drug and alcohol abuse or misuse. Also known as 'for cause' or 'reasonable cause' or 'reasonable grounds' testing.

Rehabilitation The action of restoring someone to health or normal life through training and therapy.

Ship For the purpose of this paper, the term 'ship' means a vessel of any type operating in the marine environment, and includes barges, floating/fixed platforms and offshore support craft.

Ship operator The owner of the ship, or any other organisation or person such as the manager or the bareboat charterer, who has assumed responsibility for operation of the ship from the owner and who, on assuming such responsibility, has agreed to take over all the associated duties and responsibilities.

Supervisor/manager A person at a work site who is in a position of authority. The supervisor/manager is often responsible for co-ordinating required collection for any type of testing (on-site, off-site, random, post-incident, reasonable suspicion/cause, etc), receives notification from collections where immediate action is required, and works closely with the operator.

Specimen Bodily fluid or material collected from a donor at the collection site for the purpose of a drug or alcohol test.

Self-medication The use of non-prescribed or prescribed drugs to treat self-diagnosed disorders or symptoms.

Substituted specimen A urine specimen that has been submitted in place of the employee's own urine. This is a form of specimen adulteration that here applies specifically to urine, as that is the only sample likely to be collected unobserved.

Third-Party Administrator (TPA) A business entity that administers drug and alcohol testing programmes on behalf of the ship or terminal operator.

Terminal operator A terminal company providing the ship/shore interface with a ship operator. This includes ship loading and discharging, fuel supply, etc.

Unconscious bias A term that describes the judgements individuals or organisations may make, based upon assumptions outside of their conscious awareness and control. These biases can influence decisions and actions.

Abbreviations

BAC	Blood Alcohol Content
CE Marked	Compliance with the relevant EU legislation
CIPD	Chartered Institute of Personnel and Development
COC	Chain of Custody
D&A	Drug and Alcohol
DHHS	US Department of Health and Human Services
DOT	US Department of Transportation
DPA	Designated Person Ashore as per ISM Code
EBT	Evidential Breath Testing
EtG	Ethyl glucuronide
FAEE	Fatty Acid Ethyl Esters
FDA	US Food and Drug Administration
FRA	US Department of Transportation – Federal Railroad Administration
GC-MS	Gas Chromatography/Mass Spectrometry
HR	Human Resources
ILO	International Labour Organization
IMO	International Maritime Organization
IPIECA	International Petroleum Industry Environmental Conservation Association
IOGP	International Association of Oil & Gas Producers
ISM Code	International Safety Management Code
LSD	Lysergic Acid Diethylamide
LC-MS	Liquid Chromatography/Mass Spectrometry
MRO	Medical Review Officer
MS-MS	Tandem Mass Spectrometry
OCIMF	Oil Companies International Marine Forum
NTSB	US National Transportation Safety Board
PCP	Phencyclidine
POCT	Point of Care Testing
SME	Subject Matter Experts
STCW	Standards of Training, Certification and Watchkeeping
THC	Tetra Hydro Cannabinol
TPA	Third Party Administrator
UNDCP	United Nations International Drug Control Programme

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1 Introduction

The Oil Companies International Marine Forum (OCIMF) and the maritime industry in general recognise the risks and potentially serious impacts associated with the use of drugs and alcohol.

For the purpose of these guidelines, drug and alcohol use includes:

- The use of prescribed and over-the-counter medication.
- Self-medication.
- Recreational drug or alcohol use.
- Drug or alcohol dependency.
- Accidental exposure to drugs or alcohol.

Drugs in this context includes all chemical substances that can impair cognitive function, such as attention, focus, and decision making.

Drug and alcohol use can put the safety of maritime operations at risk. There can also be legal requirements and consequences in relation to drugs and alcohol in the maritime industry.

The reasons for substance use can be complex. OCIMF emphasises the need to adopt a clear drug and alcohol policy, which includes preventive and supportive measures as well as a testing programme and disciplinary measures. Creating an environment where individuals feel supported and able to ask for help is an essential aspect to managing this risk.

1.1 Scope

This information paper aims to provide general guidance and recommendations for the maritime industry (operators of maritime tankers, barges, offshore vessels and terminals associated with the ship-shore interface) in developing and implementing controls for drugs and alcohol. It is aimed at company Human Resources (HR), Health Safety Security and Environment (HSSE), and relevant personnel who are responsible for developing and implementing the policy and ensuring that the relevant standards and procedures are followed.

This information paper covers workplace testing but does not address testing associated with the treatment and recovery of identified substance dependency cases, nor return to work testing.

When designing a policy and procedures in relation to the control of drugs and alcohol, legal and other medical professional advice should be sought on the specific circumstances, including a review of legal authority in the country or jurisdiction where workplace drug and/or alcohol testing may take place. These guidelines do not replace or supersede Flag State, local, regional, or national laws and/or regulations related to this topic. If these guidelines conflict with such laws and/or regulations, those laws shall take precedence. This does not preclude a company from having a stricter drug and alcohol policy and/or standard than required by law.

These guidelines replace OCIMF's *Guidelines for the Control of Drugs and Alcohol Onboard Ship* (first edition, 1995). The second edition was withdrawn in 2020. The scope of this paper has been expanded to cover ships, barges, terminals and the offshore industry. There is new information on sampling and testing methods and details of substances to be tested. A human factors lens has been applied throughout the document.

1.2 The risks associated with drugs and alcohol

Drug and alcohol use can result in significant personal health, safety and wellbeing concerns (see root-cause diagram in figure 1.1). Skills such as judgement, reaction time, physical coordination, cognition and communication processes can all be impaired, resulting in reduced capability and increasing the risk of incidents and accidents in the workplace. Productivity levels, performance and conduct can also be affected, which may impact employment.

It is important to note that such impairment at work can also be caused by factors other than drug and alcohol use, including but not limited to fatigue, lack of sleep/rest, stress and anxiety, demands at home or at work, health conditions, lack of psychological safety and sense of belonging.

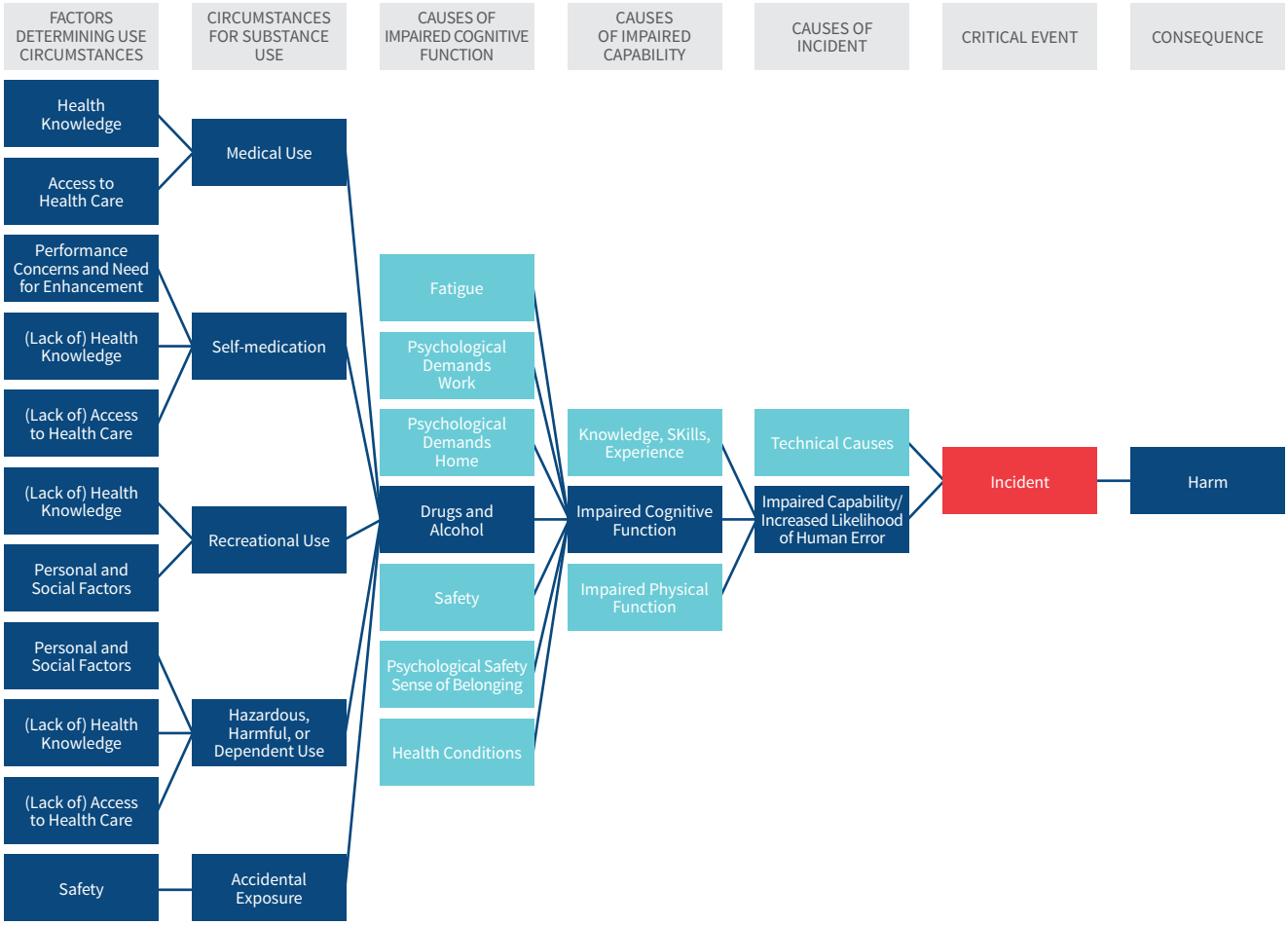
Substance use can be influenced by health, psychological, emotional, personal, social, cultural, and other environmental factors. Work factors, such as job design and organisation, can also play a part, as well as anxiety or stress from working conditions, excessive job demands, shift work, long hours, monotony, or remote working. A prevailing culture which tolerates, for example, recreational substance use, may normalise the risks and associated behaviours. Raising awareness and knowledge and providing appropriate healthcare can help prevention and treatment of cases.

1.3 Underlying causes

The root-cause diagram in figure 1.1 is an example of an industry bow tie showing the primary factors that may result in an individual's use of drugs and alcohol, the different circumstances under which this may occur and the relationship between the two. It also highlights the effects of drug and alcohol use on an individual's capability and the link with increased risk of incidents.

Putting suitable measures in place to address each of these factors may help reduce the likelihood of drug and alcohol use – emphasising the focus on prevention. Broadly speaking, this will often require protecting individuals from exposure, promoting knowledge and understanding about the health impacts, and helping people to access suitable healthcare support.

As noted above, there are many factors other than the use of drugs and alcohol that can lead to impaired cognitive function, including fatigue and psychological demands. These often exacerbate each other and therefore it is important to address these causes as part of an overall health and safety system and incident prevention.



Key: Dark blue represents key elements related to drug and alcohol use; Light blue represents other factors.

Figure 1.1: *Root causes and effects of drug and alcohol use*

1.4 Effective management of drug and alcohol use

Effective management of drug and alcohol use is best focused on prevention. This should extend to creating a culture where people feel able to come forward with a problem and ask for help, rather than one that solely relies on disciplinary action. How leaders respond will significantly influence future behaviours and any reduction of stigma or barriers to seeking help. People are more likely to come forward if they know they will be treated fairly, compassionately and with respect.

It is important to recognise the complexities around the use of drugs and alcohol. Drug and alcohol use can occur in a range of different circumstances and can affect all kinds of people, who may not show obvious signs. Indeed, some signs may be caused by other factors altogether, such as anxiety, stress or other mental or physical health problems. Organisations should raise awareness and understanding around these health and wellbeing matters, to avoid assumptions and bias, including unconscious bias, and promote a psychologically safe environment.

The success of implementing a holistic drug and alcohol policy is directly related to the leadership commitment to wellbeing, how it is communicated and how it is experienced throughout the organisation.

2 Policy, standards and procedures

This section gives guidance on the elements that should be considered for the control of drugs and alcohol in the maritime sector. This includes guidance on drug and alcohol policy, where operators can refer for standards, and suggestions for effective procedures onboard, aligned with standards and policies.

A policy sets out the guiding principles a company intends its employees to follow. For it to be effective, it needs to be supported and put into practice through other elements of a control document hierarchy, such as standards and procedures. Each is distinct and serves a specific purpose. A policy should not try to be all three: such a policy would run the risk of being confusing and inoperable.

In the table below, two examples of drug and alcohol topics have been used to illustrate the difference between the three governance documents.

	Example 1: Training	Example 2: Alcohol levels
Company policy	The policy may state the company's view that leadership training and competency is critical to the implementation of the policy.	The policy may state that to ensure safe operations, it requires that employees are not under the influence of alcohol while at work.
Company standard	What the company's leadership training requirements are for various roles, in terms of particular requirements, training content, specific qualifications, etc.	The company may set a standard that requires the use of an evidential breathalyser if alcohol use is suspected and use a specific cut-off level for alcohol.
Company procedure	The documented description as to how this competency is to be developed and maintained, and how it is to be deployed in the implementation of the policy.	The company procedure documents where the testing should be conducted, how the evidential breathalyser is prepared and checked, how the device is set up, how the sampling is conducted, and how the results are read and documented.

Table 2.1: *The difference between policy, standards and procedures*

2.1 Policy

All organisations can benefit from a clear drug and alcohol policy. This may be part of an overall health and safety policy and could be linked to a company's health and wellbeing offering. This will ensure a consistent risk-based approach by combining a preventive and supportive approach to help employees, while managing the operational risks through appropriate barriers and with disciplinary action when needed.

The following sections outline the recommended elements for consideration in an effective drug and alcohol policy. At a minimum, organisations should have a policy that addresses expected and prohibited behaviours or actions if needed, details of drug and alcohol sampling and testing procedures, and disciplinary measures. OCIMF recommends a more comprehensive policy, which will also address the wider health and safety and wellbeing issues arising. This should include prevention, education and awareness, leadership behaviours and culture, treatment and rehabilitation, and employee consultations in the framing and development of the policy.

2.1.1 Legal requirements

Depending on jurisdiction there may be legal prohibitions to import, stock, possess, or use drugs or alcohol, and there may be legal requirements for drug and alcohol testing. Non-compliance with these rules may have legal consequences for the employee and the employer.

2.1.2 Policy scope

The policy should define who it applies to. In most circumstances this should be everyone in the organisation, including contractor personnel. The company should ensure that its contractors' policies on drugs and alcohol align with company policy. There may also be reasons to make reference to safety-critical positions/roles or safety-critical work/operations.

It should also specify what substances or categories of substance are prohibited under the policy. This should include any psychoactive substance (i.e. affecting cognitive function), regardless of circumstances of use. It is advised that companies obtain advice from their contracted accredited laboratory and/or their Medical Review Officer (MRO) to determine what substances are covered.

Individual countries and jurisdictions may have differing regulations on the import, stocking, possession, or use of drugs or alcohol, and there may be legal requirements for testing. The policy will need to take this into account and make appropriate stipulations and requirements, especially with respect to prohibited behaviours, sampling and testing. These requirements should be made clear to personnel.

The policy should also refer to those situations where the use of substances is permitted, specifying what the company will allow and the company's expectations and requirements with respect to usage and fitness to work. Local regulations should always be considered and should take precedence when defining specific policy parameters.

Permitted use may include prescription drugs brought onboard a ship, with evidence of a valid prescription from a qualified registered medical practitioner or issued from the ship's medical store or the terminal's clinic.

- Example: Before joining a ship, personnel should inform the manning company of the type and quantity of all prescription and non-prescription medication in their possession and should notify relevant side effects of this medication that could affect work performance and safety. On joining a ship or arriving on to a worksite, personnel should inform the Master/Supervisor. When in doubt, medical advice on fitness to work should be obtained. The Master or Terminal Supervisor can, if required, contact company medical support to seek clarification on the effects of taking declared medication. This information should be treated with confidentiality, respecting the privacy of the individual(s) involved.

A company should also consider under what specific circumstances mitigating factors would be taken into account in the event of accidental exposure to a substance.

This does not preclude a company from having a zero-alcohol and a zero-drug policy on company premises, ships, etc.

2.1.3 Minimising safety risks

Companies should put barriers or mechanisms in place around 'impaired cognitive function' (see third column of the root cause diagram in section 1.3) so that they can recognise impairment, whether it is caused by the effects of drug and alcohol or other factors, before individuals get to the next stage of 'impaired capability'. It is therefore important that the drug and alcohol policy ties in with the company's health and safety policy.

2.1.4 Expectations and consequences

A drug and alcohol policy should set out clear and consistent expectations regarding conditions of employment, employee behaviour and the consequences of not meeting these expectations. It is recommended that companies set out in their policy a clear and consistent legally compliant stand-down procedure for those cases where the drug and/or alcohol test is confirmed positive. Employees are expected to follow stand-down orders. Depending on company, role and situation, this could mean standing down from all duties, or standing down from safety critical duties only.

The policy should highlight and describe those situations or behaviours where disciplinary or other action will be taken, up to and including termination of employment.

Typical examples may include:

- Using, distributing/selling, or possessing alcohol or drugs at work other than where use is permitted.
- Non-compliance with Standards of Training, Certification and Watchkeeping (STCW) guidance.
- Being under the influence at work, or otherwise unfit for work, due to any prohibited substance.
- Not complying with stand-down orders given after a positive test result.
- Refusal to test, interfering with or obstructing a sampling and testing process or otherwise failing to cooperate or comply.

Consequences should be consistent with local company policy and the law. Since many companies will have operations spanning different countries, it may be necessary to adapt the drug and alcohol policy according to legal advice from those jurisdictions.

Companies should have a fair review process, ensuring personnel can challenge a positive result.

2.1.5 Sampling and testing

Where a company or organisation has a sampling and testing regime, the drug and alcohol policy should refer to it and provide an overview of the rules of engagement, including considerations regarding confidentiality, data privacy, diversity, equality and inclusion, and human rights. Generally, it should specify the type of testing the company will conduct to detect or deter the use of drugs and alcohol, and the employees or positions (i.e. safety-critical) that require testing.

Due to the invasive or intrusive nature of some sampling and testing methods, the gender of the individuals involved will need to be respectfully considered when a company produces its drug and alcohol policy. The policy should also recognise the national, social, cultural, ethnic and religious variables that may influence the sampling and testing method to be followed in order to respect the dignity, privacy, confidentiality and fundamental legal rights of the individuals concerned.

Since these policies and testing programmes have implications under human rights, employment, criminal, occupational safety and health, and data privacy laws, it is strongly recommended that they are developed under the guidance of a legal professional, drug and alcohol programme professional, human resources professional, and an occupational health or medical professional.

2.1.6 Prevention, treatment and rehabilitation

Effective management of impairment through drug and alcohol use is best focused on prevention, intervention and support for employees as part of an organisation's overall health and wellbeing approach.

Early intervention can help employees to access the individual support, treatment and if needed, rehabilitation they need, to either stay in work or make an effective return to work. By supporting employees back to work, employers will be able to retain talented people as well as enhance their reputation as an organisation that values people.

It is therefore vital that organisations clearly communicate the help that is available and build a supportive culture so that employees know how to ask for help and trust that their employer will support them when they do. This psychological safety helps create conditions where employees are more likely to voluntarily self-disclose drug or alcohol-related problems, which provides opportunities for organisations to anticipate issues and potential incidents.

A comprehensive and preventive drug and alcohol policy would include the development of a rehabilitation programme to assist in the confidential assessment, treatment and recovery of those individuals with substance dependency, the provision of signposting to healthcare for those with medical needs, or the availability of an Employee Assistance Programme for those experiencing stress or mental health issues. External specialist assistance may be helpful in setting up such programmes, or in providing similar support on an 'as needed' basis, which may be more feasible for smaller organisations. Adapting work schedules around treatment plans also demonstrates support.

2.2 Standards

A standard can be an in-house, company document, or an international or industry standard. It usually outlines a set of requirements on a topic, drawn from science, regulation and best-practice. An example of a standard is drug testing cut-off levels that may be recommended externally (for example the IPIECA/IOGP drug and alcohol testing guidelines) or required by law (for example for testing under the US Department of Transport (DOT) rules).

Standards may vary according to context/working environment (e.g. inland barging, tankers, offshore or terminals), workforce, and jurisdiction.

2.2.1 Recommended standards

In their drug and alcohol policy for employees and contractors, organisations should state what panel of drugs is tested for and clear permissible limits. It is recognised that there are different drug panels and varying limits quoted in the maritime industry, and it is expected that organisations will comply with local laws and requirements. If an individual company wishes to set its own drug panel or stricter levels than per legal requirements (e.g. led by their own experiences and lessons learned), it should ensure that the approach is still scientifically valid. In these cases, it is strongly advised that the company obtain advice from its contracted accredited laboratory and/or MRO.

OCIMF's recommendation is as follows:

- **As a minimum, follow the alcohol levels stipulated by the latest revision of the STCW Code.**
- **For drug panel (selection of drugs to test for) testing, follow the guidance given in the latest version of IPIECA/IOGP Oil and gas contractor drug and alcohol testing guidelines.**

Operators should also be aware that over time, new drugs or testing technologies will evolve, and they should always confirm with the appointed certified toxicologist on the most appropriate testing panel. As a minimum, it is recommended to test for the following drugs: cocaine, cannabis/marijuana, amphetamines, opiates, methamphetamines, methadone, benzodiazepines and opioids.

It is recommended to choose drug and alcohol testing programmes with the most appropriate technology for the specific type of organisation, e.g. inland barging, tankers, offshore or terminals. Considerations may include available tests, cost, gender sensitivity, any medical advice, availability of competent persons and laboratories to carry out relevant tests, and the practicalities of the sampling processes.

2.3 Procedures

Procedures help in determining how an organisation implements a policy or meets a standard, regulation or control. An example of a procedure is the sequence of actions that are taken when receiving an MRO-positive test result, including who is informed, how the employee's duties are restricted, how the employee can challenge the results, and any further managerial or disciplinary steps.

2.3.1 Education, training and awareness

A key element in implementing any effective policy is to provide employees and line management with the awareness, knowledge and skills they need to implement the policy, and to handle such situations as may arise during operations.

As a minimum, the details of the policy and any testing programme, the potential risks associated with the use of alcohol and drugs and its implications, the available resources and who to go to for help, should be clearly communicated with all employees during orientation and induction training.

Training and awareness-building content should highlight the critical importance of a safe workplace free from impairment through drugs or alcohol, provide a basic education on the signs of impairment through drugs or alcohol use or dependency, and clarify personal responsibilities. It is also important that a process is in place to notify employees and contractors of the policy and the supporting procedures.

Managers and supervisors would benefit from awareness training and being periodically reminded of their responsibility to understand and execute key provisions of the policy. However, a more comprehensive and effective drug and alcohol policy will recognise that an emphasis on prevention is the most effective method to controlling and minimising the risk of impairment through substance use. To facilitate this and help develop the necessary supportive culture, the training of key individuals (as decided by the company), line managers and Designated Persons Ashore (DPAs) could also focus on recognising signs of stress, recognising the symptoms of drug and alcohol problems, and on how to manage and support employees generally.

Many managers and DPAs may not have the expertise or experience in supporting individuals with impairment through drugs or alcohol use or dependency, so it may be necessary to obtain specialist support and guidance in developing this aspect of the policy and its implementation.

2.3.2 Sampling and testing

Sampling and testing procedures should outline who they are applicable to, how the process is to be conducted, what type of testing is required and the relevant actions following the results of the test. The method of testing should identify the substances to be tested for (drug panel).

When developing procedures, companies should consider the following:

- Drug and alcohol testing of personnel by itself will not solve problems caused by drug and alcohol use and, where introduced, should be part of a company's overall health and safety policy.
- Testing for drugs and alcohol will only detect a limited spectrum of substances that might result in impairment of work capability. A comprehensive risk management approach should ensure that barriers are in place to mitigate the risk of impaired capability, no matter what the cause is.

Specific legal requirements of the jurisdiction may determine what testing can be done and how it must be done. Provided the legal requirements are met, the procedures should include:

- Employees must consent to being tested for drugs and alcohol for practical and legal reasons. Should they refuse when an employer has grounds for testing, they should be made aware that they may face disciplinary action.
- Testing must strictly follow validated and authorised processes, to ensure samples cannot be contaminated or tampered with, and that testing procedures and analyses are accurate. It is recommended that companies follow a legally defensible process. This must include adequate training of all parties from sample collection to issuing the validated results, a robust chain of custody process, validated testing methods or laboratories, and an MRO process for non-negative (laboratory positive) samples.
- Unannounced testing can be done at the workplace and can be done by a trained company collecting officer or an external party – for both drugs and alcohol.
- Unannounced alcohol tests conducted on-board ships or in terminals can be initiated by the ship's Master, the Terminal Manager or the company. Initiation by the company is important to ensure there is the ability to test the Master or the Terminal Manager.

The following types of drug and alcohol screening at a minimum are recommended:

Type of testing	Frequency
Pre-employment	As required
For cause/reasonable suspicion/post-accident or incident	As required
*Unannounced random/periodical	Once per year OR sufficient to serve as a deterrent to misuse
Return to work/post-treatment	As required

* For terminals: random and unannounced testing is legally permitted in some locations and not in others. Local regulatory requirements/laws will always take precedence.

Table 2.2: *Minimum recommended testing types*

3 Advancements in sampling and testing

The table below summarises technological advancements in sampling and testing and provides detail on methods of testing, drugs tested, collection and analytical methodology, its accuracy, scientific acceptability, litigation risk and the advantages/disadvantages for each method.

This table is for information only. Some of the testing methods are only suitable in very specific circumstances. Organisations should select a testing method(s) which is compliant with legal requirements. Organisations should take advice from their toxicology laboratory and their MRO to select the testing method that best suits their need to be compliant with the guidance as specified in this document.

Operators should be aware that breath, urine, saliva/oral fluid and hair are common workplace testing specimen types. Blood, sweat and nail specimen types are not commonly used at workplace testing unless there are exceptional circumstances. Operators should also refer to the latest version of the IPIECA/IOGP guidelines regarding suitable specimen types.

For information only

	Method	Current use	Drug/alcohol tested	Collection methodology	Analytical methodology	Accuracy	Scientific acceptability	Litigation risk	Advantages/ disadvantages
1	Breath	Used extensively in workplace alcohol testing programmes. Not routinely used for workplace drug testing.	An evidential breath alcohol test measures how much alcohol is in the air you breathe out, correlating to how much alcohol is in blood. A newly designed device can detect 12 different controlled substances, including methamphetamine, cocaine, heroin, morphine and marijuana, with reasonable accuracy.	No gender bias for observer. Easy sampling. Unique identification number will be assigned to printed results. Requires qualified technician or collector or a person trained for any device used.	Breath testing is safe and unintrusive. There is virtually no risk of harm or infection to the subject being tested. Breath testing is fast and inexpensive, and evidential breath testing machines are designed to last for an extended period of time before replacement.	The amount of alcohol in expired breath differs from person to person. Breath testing relies on the proper maintenance of the breath machine, proper administration of the test, and proper screening of the breath test candidate. Certain factors are known to cause elevated breath test results. If a person has a fever or higher than average breath temperature, the amount of alcohol will be perceived as being higher because the breath machine is set to accept a breath sample at specific temperature. Breath testing does not specifically test for alcohol, and this can present problems for people who have other chemicals in their body. Acetone, toluene and other organic compounds may measure as if they are alcohol.	Approved instruments such as US National Highway Traffic Safety Standard EN 15954, UK Home Office, Canadian Society of Forensic Science Alcohol Test Committee. Drugs in breath requires specialised laboratory testing using highly sensitive Liquid Chromatography/ Mass Spectrometry (LC/MS) instrumentation.	Generally admissible in court of law (depends on local laws).	Widely accepted as equivalent to blood alcohol levels. Widely used. Range of instruments available. Easy to use. Alcohol levels can relate to impairment.

	Method	Current use	Drug/alcohol tested	Collection methodology	Analytical methodology	Accuracy	Scientific acceptability	Litigation risk	Advantages/ disadvantages
2a	Urine – lab based	Used extensively in workplace drug and alcohol testing programmes and in treatment and correction programmes.	Regulated marijuana, cocaine, amphetamines (amphetamine and methamphetamine), opiates (codeine and morphine). Opioids, phencyclidine. Barbiturates, benzodiazepines, LSD, methadone, methaqualone, propoxyphene, ketamine, tramadol, synthetic cannabinoids. Alcohol.	Unobserved collection is common with provision to limit substitution or adulteration. Custody-and-control forms document process. Split specimens are often obtained. Gender bias for observer. Simple and effective.	Regulated testing required immunoassay screening followed by Gas Chromatography/ Mass Spectrometry (GC/MS) or LC/MS confirmation at certified labs. Nonregulated tests may use other methodologies. Confirmation may not be included. Adulteration testing possible.	Regulated testing essentially 100% accurate for positive confirmed results. Nonregulated testing may be equally accurate. Procedures using screening without confirmation are subject to false-positive results. Extensive performance-testing programmes are available. Samples leak, spoil if not stored correctly.	Vast body scientific literature addressing all aspects of urine testing. Properly conducted and evaluated urine tests are accepted and effectively utilized. Numerous court cases have upheld test results.	Minimal if procedures are followed correctly.	Most common testing process. Widely accepted. Moderate detection windows. Requires specialised facility (toilet). Gender bias.
2b	Urine – on site	Increasing use in workplace programmes as well as drug treatment and correction programmes.	Single and multiple Point-of-Collection (POC) drug kits available. Most of the tests listed in 2a above are available. LSD test unavailable.	Similar to laboratory-based collection. Results are readily available to collector. Roche test cup uses collection device for testing. Split specimens can be collected for lab confirmation using POCT device. Gender bias for observer. Simple and effective. Carried out by a trained individual and handled correctly. Carried out in a sensitive and respectful manner.	Uses immunoassays and is not directly confirmed. Built-in controls may only monitor part of the testing process. Minimum space required. Some temperature dependent processes. Adulteration testing also possible. Screening must be followed by GC/MS or LC/MS confirmation at certified labs.	Procedures have been developed to ensure reliability, however: • Determination of endpoint is subjective in nature and subject to inter-individual differences. • Kits vary as to detection endpoints. • Colour-blindness and visual acuity are issues. • Cut-off concentrations are subjective.	Not generally used for forensic purposes. Not supported by court experience. Limited body of scientific literature. Laboratory confirmation processes are the same as above. Risk of confrontation if donors are notified of a screen “positive” result.	Higher than laboratory testing unless procedures followed correctly, and positive tests confirmed in laboratory.	Faster initial screen results. Widely accepted. Requires specialised facility (toilet). Moderate detection windows. Requires laboratory confirmation of positive results. Gender bias. Confrontation risk.

	Method	Current use	Drug/alcohol tested	Collection methodology	Analytical methodology	Accuracy	Scientific acceptability	Litigation risk	Advantages/ disadvantages
3a	Saliva/oral fluid – lab based	Increasingly used in workplace testing for drugs and alcohol.	Regulated marijuana, cocaine, amphetamines (amphetamine and methamphetamine), opiates (codeine and morphine). Opioids, phencyclidine methadone.	Commercial devices are available for collection. Devices must be approved by the relevant authority, e.g. FDA, CE, US DOT, UK Home Office, etc. Requires qualified technician or collector or a person trained for any device. Observed collection normal. No gender bias. No specialised collection facilities required.	Regulated testing required immunoassay screening followed by GC/MS or LC/MS confirmation at certified labs. Nonregulated tests may use other methodologies. Confirmation may not be included. Adulteration testing possible.	Essentially 100% accurate for positive results. Nonregulated testing may be equally accurate. Procedures using screening without confirmation are subject to false-positive results. Extensive performance-testing programmes are available. Samples leak, spoil if not stored correctly.	Increasing body of scientific literature on aspects of saliva testing. Properly conducted and evaluated saliva tests are accepted and used effectively. Numerous court cases have upheld test results.	Minimal if procedures are followed correctly.	Widely accepted testing process. No need for toilet facilities. Gender neutral. Shorter window of detection than urine (1-2 days). Confrontation risk.
3b	Saliva/oral fluid – on site	Increasingly used in workplace testing for drugs and alcohol.	Single and multiple Point of Collection (POC) drug kits available. Most of the standard drugs of abuse can be tested for but panels are more limited than urine testing.	Commercial devices are available for collection. Devices must be approved by the relevant authority, e.g. FDA, CE, US DOT, UK Home Office, etc. Requires qualified technician or collector or a person trained for any device. Observed collection normal. No gender bias. No specialised collection facilities required.	Uses immunoassays and is not directly confirmed. Built-in controls may only monitor part of the testing process. Minimum space required. Some temperature dependent processes. Adulteration testing also possible. Screening must be followed by GC/MS or LC/MS confirmation at certified labs.	Essentially 100% accurate for positive results. Nonregulated testing may be equally accurate. Procedures using screening without confirmation are subject to false-positive results. Extensive performance-testing programmes are available. Samples leak, spoil if not stored correctly.	Increasing body of scientific literature on aspects of saliva testing. Properly conducted and evaluated saliva tests are accepted and used effectively. Numerous court cases have upheld test results.	Higher than laboratory testing, unless procedures are followed correctly and positive results are confirmed in laboratory.	Faster initial screening results. Widely accepted testing process. Requires laboratory confirmation of positive results. No need for toilet facilities. Gender neutral. Shorter window of detection than urine (1-2 days). Confrontation risk.

	Method	Current use	Drug/alcohol tested	Collection methodology	Analytical methodology	Accuracy	Scientific acceptability	Litigation risk	Advantages/ disadvantages
4	Hair	Increasingly used in workplace testing and for preemployment testing. Used in death investigations when other specimens are not available. Used in forensic investigations.	Common drugs of abuse detected including heroin and 6-acetylmorphine. Can also be used to detect coca-ethylene, which can occur after combined use of cocaine and alcohol.	Cutting locks of hair near the scalp surface at the vertex of the head; root and tip of the hair locks are identified. Chest, pubic, axillary (armpit) and arm hair also used. No gender bias for observer if testing head hair. Easy sampling. Ethyl Glucuronide (EtG) and Fatty Acid Ethyl Esters (FAEE) are direct markers of alcohol consumption. A and B samples required for legally defensible testing.	The parent drug is often present. Few laboratories perform hair analyses. Specifically adapted immunoassays for screening and G/MS for confirmation. Tandem MS-MS is required to increase sensitivity for marijuana testing. Detection window of approximately 3-6 months.	Performance testing programmes exist. Variation of analytical results because of nonuniform matrix. False-negative and false-positive results reported in National Institute of Standard Technology survey. Used with routine samples (e.g. blood and urine).	Controversial aspects of hair testing remain unresolved. Possibility of drug entry from sweat and from the environment are issues. Interpretation of dose and time relationships not established. Possibility of ethnic bias related to melanin content. Feasibility of hair testing for marijuana use uncertain.	High to moderate (depending on drug).	No need for toilet facilities. Less widely used than urine or saliva. Gender neutral (head hair). Cannot detect recent substance use.
5	Blood	Used in death investigations. Driving under the influence of drugs. Post-accident investigation. Clinical, diagnostic, drug overdose purposes.	Hundreds of drugs have been tested. Not generally available due to the complexity of testing. THC testing is particularly difficult.	Venepuncture must be performed by trained medical personnel. Concern regarding the transmission of bloodborne diseases. No gender bias for observer. Need specialist for sampling.	Requires extensive sample preparation. Large database of methods, procedures, and experiences available. No specifically approved procedures exist. No standard methodology except for therapeutic drug monitoring.	Limited performance-testing programmes exist.	Scientific consensus available due to extensive literature base. Results have routinely been accepted by courts for criminal and civil litigation purposes.	Minimal, if defined procedures are followed.	Good for forensic testing. Rarely used in workplace setting. Requires trained HCP/technician. Drug stability issues.

	Method	Current use	Drug/alcohol tested	Collection methodology	Analytical methodology	Accuracy	Scientific acceptability	Litigation risk	Advantages/ disadvantages
6	Sweat	Generally used for criminal justice system for monitoring parolees and prisoners. Interest in use by the treatment community. Not routinely used in workplace drug testing.	Drugs identified include cocaine, morphine, 6-acetylmorohine, codeine, amphetamine, methamphetamine, tetrahydrocannabinol, phencyclidine, methadone, alcohol, and nicotine.	The 'sweat patch' consists of an adhesive layer on a thin transparent film of surgical dressing to which an absorbent cellulose pad is attached. Worn for several days to several weeks Placed in protective container and shipped to laboratory for analysis.	Research limited until recently because of the difficulty in collection. Specific, immunoassay methods to detect the five DHHS drug classes. Confirmation is performed by GC/MS. Parent drug detected.	No performance-testing programmes.	Sweat patch methodology approved by FDA (US).	High; little judicial precedent.	Easy to collect. No specialised facility required. Gender neutral. Not widely used in workplace testing. Limited sample volume. Lack of A and B samples.
7	Nail	No widespread use. Limited use by private sector.	Drugs including opiates, cocaine, amphetamines, barbiturates and benzodiazepines. Detects alcohol use.	No gender or pigment bias when testing nail. EtG and FAEE are direct markers of alcohol consumption. Less invasive because most people regularly clip their nails. Nails are not generally associated with religious or ceremonial customs.	Like hair testing, nail testing can be used to detect drug and alcohol use across long detection windows of approximately 3-6 months or even up to 12 months – depending on whether the sample is a fingernail or toenail. Good to detect if an individual has consumed a drug in the past few months, even longer time periods than hair. Method cannot be used to detect recent substance use or one-time use. Sample collection is only possible with fingernails or toenails over a certain length. Toenail samples cannot be collected if the donor suffers from peripheral artery disease or diabetes.	No performance-testing programmes. Alcohol testing can be carried out alone or combined with drug testing (e.g. blood testing).	Mostly limited to specific instances involving forensic investigations.	Generally admissible in court of law (depends on local laws).	Easy to collect. No specialised facility. Gender neutral. Not generally used in workplace testing. Limited sample size. Lack of A and B samples. Cannot determine very recent drug use.

Table 3.1: *Table summarising technological advancements in sampling and testing*

Source: (Reproduced in part: Caplan YH, Cone EJ. Drug Testing Advisory Board. Rockville, MD: Substance Abuse and Mental Health Services Administration, 1997)
(Note: The content of this table has been validated by medical professionals as being valid and relevant at the time of writing.)

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